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The Tribes and Genera of the African Asilidae (Diptera)*

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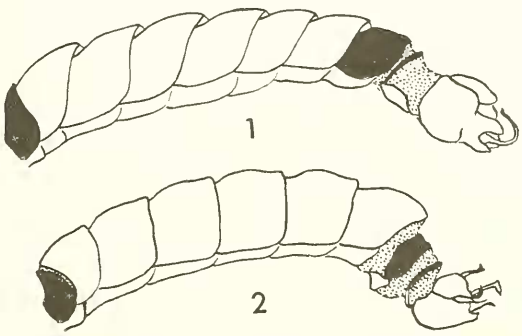
It gave me great pleasure to be invited to contribute a paper to this volume in honour of the 75th birthday of Professor Dr. Erwin Lindner, and it seemed to me that African Asilidae would be an appropriate subject. As this paper will show, much of what we know of these flies we owe to German dipterists, from Wiedemann and Meigen, to Hermann and Engel, and recently to Professor Lindner himself.

I therefore take this opportunity to publish a working key to the tribes and genera of Asilidae that occur in Africa south of the Sahara, or in the adjoining desert areas of the Middle East. It must be emphasised that this is a practical key, for the purposes of identification, and not a scheme of classification.



Figs. 1, 2: Abdomen of male of *Laxenecera* (1) and *Hoplistomerus* (2), segments 1, 8, 9 shown in black.

It is easy to obtain unidentified African Asilidae for study, because they are attractive insects to collect, and all museums have many boxes of them. Much information exists already, but it is largely uncollated, and all but the smallest genera stand in need of revisionary study.

In the following keys I have used a simple and, I hope, workable arrangement, based upon characters that can be easily seen and assessed. Hull (1962) attaches great importance to the number of segments of the palpi, two being the primitive number, reduced to one in many Asilidae. I have always found this character difficult to use, because of the dark colour and concealing hairs, and in the present keys I have tried to avoid it. Even as a "phylogenetic" character it is insecure, since such a reduction may well have taken place many times in evolution.

To some extent the same objection may be raised to the use of the structure of the prosternum as a group-character. I have used this character only once, in the simplest possible division between those Asilidae that have the small sclerite entirely surrounded

* Herrn Professor Dr. Erwin Lindner zum 75. Geburtstag.

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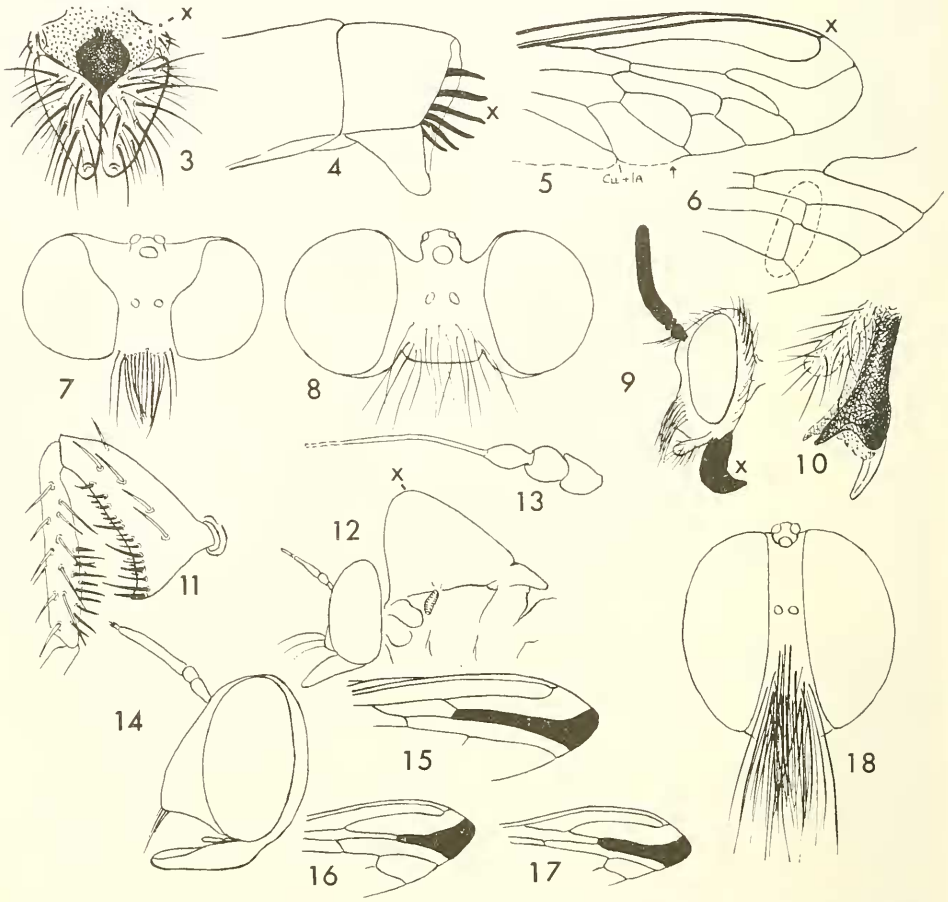
by membrane (fig. 3), and those where there is a link, however tenuous, with the pronotum. One can readily see enough of the prosternum for this purpose in most pinned Asilidae, and if this is not possible, the only "dissection" necessary is to remove the head and mount it separately, when the whole of the prosternum becomes visible.

I have arranged the African Asilidae in eight tribes as follows:

	Saropogonini	Atomosiini	Ommatiini
Leptogasterini	Stichopogonini	Laphriini	Asilini
	Xenomyzini	(Inc: Laphystiini)	

Leptogasterini, Asilini and Laphriini are distinctive in general appearance, once this has been learned. Ommatiini differ from Asilini only in having the arista of the antenna feathered. Atomosiini are like small Laphriini with a rectangular arrangement of certain wing-veins (fig. 6): they have a characteristic shape and proportion, somewhat like that of a sawfly.



Figs. 3—18: 3, prosternum (×) in Saropogonini; 4, acanthophorites (×) in ♀ Saropogonini; 5, wing of *Hoplistomerus*, showing reflexed vein R_{2+3} (×) and extent of costa; 6, detail of venation in Atomosiini; 7, head of *Stichopogon;* 8, head of *Rhipidocephala* (Xenomyzini); 9, head of *Ancylorrhynchus,* with hooked proboscis (×); 10, proboscis of *Hynirhynchus;* 11, fore femur and tibia of *Gonioscelis;* 12, head and thorax of *Oxynoton*, showing humped mesonotum (×); 13, antenna of *Xenomyza;* 14, head of *Lycostomus;* 15—17, detail of wings of *Alcimus* (15), *Promachus* (16) and *Philodicus* (17), with third submarginal cell shown in black; 18, head of *Stenopogon,* showing narrow frons and face.

In any one collection of Asilidae about half of the species will fall into one or other of the five tribes just mentioned. The rest are "Dasypogoninae", and I have dealt with these in three tribes. Stichopogonini are easily recognisable by the saddle-shaped vertex of the head (fig. 7), and have a distinctive grey appearance. Xenomyzini are "Goggle-eyed" flies, with eyes disproportionately large (fig. 8). All the rest of this group I have left in one tribe, Saropogonini.

The chief differences between my arrangement and that of HULL are that he calls the Xenomyzini "Damalini", and divides my Saropogonini into Stenopogonini and Dasypogonini; and that from my Laphriini he divides off Andrenosomini, Ctenotini and Laphystiini. HULL's tribe Ctenotini, consisting of the genera *Lamyra, Stiphrolamyra, Ctenota* and *Paractenota* is probably a useful grouping, distinguished by the blunt claws and by a peculiar projecting flange at the back of the head, behind the proboscis. This second character is not mentioned by HULL, and is difficult to see because it is obscured by the hairs of the lower occiput. Because of the practical difficulty of recognising them I have left these genera to key out by means of more obvious characters.

The Andrenosomini of HULL are a group of ten genera of very varied appearance: *Proagonistes* is large, elongate, and fierce, mimicking Psammocharid wasps of the genus *Salius; Hyperechia* is also fairly large, but bulky, and closely resembles, indeed actively mimics, Xylocopid bees; the North American *Dasyllis* is a densely furry, *Bombus*-like fly; *Andrenosoma,* in spite of its name is no more like a bee than are many species of *Laphria.* There are only three representatives of HULL's tribe Andrenosomini in Africa, *Proagonistes, Hyperechia* and his new genus *Systropalpus,* and these can conveniently be run down without separating them tribally from Laphriini.

The problem of the Laphystiini is more difficult. HERMANN, and ENGEL following him, regarded these genera as a group of Dasypogoninae, removed from the Laphriinae because most of them had the first posterior cell open, and because they had no mesopleural bristles which HERMANN wished to regard as the diagnostic feature of Laphriinae (1920, p. 163). Yet he himself says later in the same paper (1920, p. 178): „Die Mesopleura trägt bei *[Hoplistomerus] serripes* Fabr. eine vereinzelte Borste ..." It seemed to me a long time ago that HERMANN pushed these genera unnaturally into Dasypogoninae in an attempt to find a more rigid definition for Laphriinae. To all appearances *Laphystia* and allied genera are Laphriinae, not Dasypogoninae, and the only question is whether, on the present system of tribal classification, Laphystiini should be separated from Laphriinae or merged with them.[1]

CARRERA has kept the Laphystiini apart, and HULL (1962, p. 72) says that he considers that they resemble Laphriinae only by convergence, though I do not know what evidence he has for this. The group is supposed to be characterised by having only six abdominal tergites in the male, but this is a character not only difficult to decide by inspection, but also doubtfully valid. Figs. 1, 2 show how this supposed reduction of the tergites comes about, compared with the abdomen of a Laphriine. In each group the first abdominal tergite is reduced to a narrow band, except at the sides, and is disregarded when counting, though sometimes it is clearly visible from above. There follow six well-defined tergites and then a seventh which, in Laphystiini, is reduced in size, and disappears beneath its predecessor. Sometimes this tergite is partly, or even completely hidden in undoubted Laphriini; many males of *Laxenecera auribarbis* Karsch have exactly the abdominal structure that is supposed to be characteristic of Laphystiini.

A similar uncertainty attaches to the marginal cell of the wing. HULL agrees that this may be either open or closed, but stresses that the second vein (R_{2+3}) is "generally, if not always recurrent" (fig. 5). This type of venation is certainly usual in this group

[1] I note that KARL (1959, p. 659) says: „Jedenfalls spricht das Hypopygium von *Hoplistomerus* ganz eindeutig für ein recht enges Verwandtschaftsverhältnis zwischen den Hoplistomerini [i. e. Laphystiini] und den Laphriini."

of genera, but there is much variation, and all stages of transition to that of typical Laphriini can be produced by small changes in the point at which R_{2+3} reaches the costa.

For the present purpose of identification of genera I do not propose to recognise Laphystiini as a separate tribe.

In the following keys the entries in square brackets [ENGEL, 1925] refer to papers in the Bibliography in which there is a key to some species of that genus. Few such keys are comprehensive, and some include only two or three species.

Key to tribes

1. Marginal cell of the wing open 2
   Marginal cell of the wing closed 6
2. Pulvilli absent. Third antennal segment short, ovoid, with a long, bristle-like arista. Very narrow, elongate flies, with a prehensile hind tarsus . . Leptogasterini
   Pulvilli nearly always present; if they are absent, then the third antennal segment well-developed, with a short apical style. Flies of varied shape, but usually stoutly built 3
3. Prosternum isolated and surrounded by membrane (fig. 3). Female with ninth tergite divided into two spine-bearing plates (acanthophorites) (fig. 4) Saropogonini
   Prosternum complete, with little or no membranous area 4
4. Vertex more or less saddle-shaped (fig. 7), or at least with the eyes much more widely separated at vertex than at antennae. Dusty grey flies, of sand-living habitus, usually with a small, roof-like moustache, and with long bristles on legs Stichopogonini
   Vertex not saddle-shaped; if eyes are widely separated above, then they are also widely separated at antennae 5
5. Flies with small face and frons and very large eyes (fig. 8) . . Xenomyzini
   Head and eyes not of this shape . . . . . some Laphriini (*Laphystia* etc.)
6. Antennae blunt, third segment club-shaped, with only a tiny apical style. Mesopleuron often with bristles just before base of wing 7
   Antennae with a slender arista, sometimes feathered 8
7. Vein M_3 straight, and parallel with outer margin of discal cell, often in line with it (fig. 6) small flies resembling sawflies . . . . . Atomosiini
   Vein M_3 curved, not parallel with outer margin of discal cell, and far from being in line with it except in *Anypodetus* and *Orthogonis* . . . . . Laphriini
8. Arista of antennae feathered . . . . . Ommatiini
   Arista of antennae bare . . . . . Asilini

Key to genera of Saropogonini

1. Pulvilli absent 2
   Pulvilli present, even if reduced in size 3
2. First and fourth posterior cells closed and stalked; stalked veins failing to reach hind margin, which has no costa much beyond vein R_4 [OLDROYD, 1957] *Sisyrnodytes* Loew, 1856
   First and fourth posterior cells open, and veins reaching hind margin. Costa continued as far as anal cell [CURRAN, 1934] . . . *Acnephalum* Macquart, 1838
3. Fore tibiae with spur 4
   Fore tibiae without spur 6

4. Abdomen clavate, constricted basally. Body and legs conspicuously elongate. Third antennal segment clavate 5

Abdomen cylindrical, sessile, not constricted basally. Body and legs compact. Third antennal segment ribbon-like [EFFLATOUN, 1937] . . *Saropogon* Loew, 1847

5. Head and thorax very bare, with only a few macrochaetae, and no soft hairs [BROMLEY, 1936; CURRAN, 1928, 1934] . . . . . *Lagodias* Loew, 1858
Neolaparus Williston, 1889 (*Laparus* Loew, 1851, nec Billberg, 1820)

Head and thorax obscured by long, furry, soft hairs *Pegesimallus* Loew, 1858

6. Epistoma projecting, giving a nose-like appearance in profile (fig. 14). Proboscis straight . . . . . *Lycostomus* Hermann, 1907

Epistoma not projecting in this way, though there may be a large facial swelling (cf. *Teratopus* and some *Ancylorrhynchus*) 7

7. Facial knob very large and prominent. Body entirely metallic blue, wings black *Teratopus* Loew, 1858

Facial knob not of this shape. If it is swollen, then the body is not metallic blue 8

8. Proboscis of strikingly unusual shape 9

Proboscis of varying length, but of normal shape 10

9. Proboscis curved like a parrot's beak (fig. 9) [BROMLEY, 1936]
Ancylorrhynchus Berthold in LATREILLE, 1827

Proboscis straight, but apparently forked, with hypopharynx protruding (fig. 10) *Hynirhynchus* Lindner, 1955

10. Fourth posterior cell closed, with a stalk, thus bringing vein M_3 almost into line with outer margin of discal cell (fig. 6) 11

Fourth posterior cell open, or closed on margin 16

11. First posterior cell closed and stalked 12

First posterior cell open 13

12. Costa ending at tip of wing, just beyond vein R_4 . . . *Eclipsis* Becker, 1908
Costa continuing round hind margin of wing
Daspletis Loew, 1858 and *Dioctobroma* Hull, 1962

13. Vein M_3 strongly arched forwards, second posterior cell projecting into first posterior cell 14

Vein M_3 almost straight, second posterior cell not projecting into first . . . 15

14. Third segment of antenna hairy on dorsal surface. Second posterior cell pedunculate at base . . . . . *Epiblepharis* Bezzi, 1908

Third segment of antenna bare on dorsal surface. Second posterior cell sessile, or with short stalk only [BROMLEY, 1927; ENGEL, 1932; TIMON-DAVID, 1952]
Microstylum Macquart, 1838

15. Face and frons very narrow, as in fig. 18. Antennae placed low, almost equidistant between vertex and epistoma . . . . . *Stenopogon* Loew, 1847

Face and frons broader. Antennae set much higher, frons only half as long as face [ENGEL, 1932; CURRAN, 1934]
Scylaticus Loew, 1858 (see also *Neodysmachus* Ricardo, 1925)

16. Head from in front as in fig. 18, with eyes, frons and face all high and narrow 17

Head from in front more circular, eyes frons and face less high 18

17. Fore femora in both sexes as in fig. 11, the arched under-surface armed with powerful spines [ENGEL, 1925] . . . . . *Gonioscelis* Schiner, 1866

Fore femora not broadened nor armed in this way [EFFLATOUN, 1937]
Stenopogon Loew, 1847

18. Basitarsi of fore and middle legs short, not differing in length from the other tarsal segments [EFFLATOUN, 1937] . . . . . *Habropogon* Loew, 1847

    Basitarsi of fore and middle legs much longer than other segments 19

19. Antennae elongate. Third segment strap-like, followed by a two-segmented style of similar shape, notched at extreme apex. Face usually prominent below antennae *Hermanella* Hull, 1962

    Antennae not of this shape. If they are elongate, then the third segment is not subdivided in this way 20

20. Face in profile distinctly swollen 21

    Face in profile not swollen, though it may be obscured by dense hairs . . . 23

21. Antennae with first and second segments almost equal in length; third segment club-shaped. Face very distinctly swollen, with strong bristles in moustache. Wings usually spotted . . . . . *Hypenetes* Loew, 1858

    Antennae with third segment flattened, ribbon-like 22

22. Face distinctly broadened above antennae. Vertex more than three times as broad as ocellar tubercle. Abdomen dull, mostly tomented, not punctate [ENGEL, 1932; CURRAN, 1934] . . . . . *Scylaticus* Loew, 1858

    Face not, or scarcely broadened above antennae. Vertex less than three times as broad as ocellar tubercle. Abdomen shining black, strongly punctate at base of each hair . . . . . *"Cyrtopogon" africanus* Ricardo, 1925

23. Head, body and legs covered with rather long, dense, erect hairs. Abdomen flattened from side to side . . . . . *Spanurus* Loew, 1858

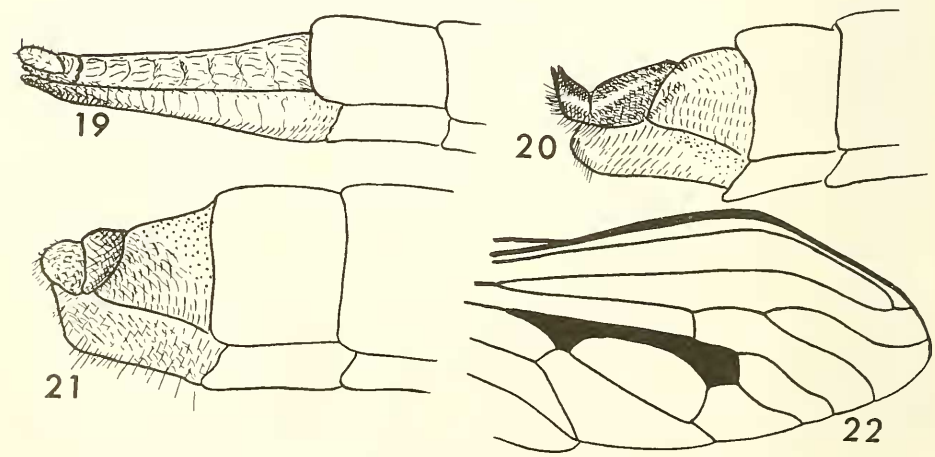
    Head, body and legs bare, or only sparsely hairy. Abdomen elongate, dorso-ventrally flattened 24

24. Moustache continued at least halfway towards antennae *Holopogon* Loew, 1847

    Moustache confined to mouthmargin, or just above it 25

25. Abdomen very narrow and cylindrical. A tiny fly, like a small *Leptogaster* *Rhabdogaster* Loew, 1958

    Abdomen cylindrical or narrowed at base into a waist [EFFLATOUN, 1937) *Heteropogon* Loew, 1847



Figs. 19—22: Ovipositors of *Dasophrys* (19), *Lophopeltis* (20) and *Neolophonotus* s. str. (21); 22, wing of male *Synolcus*, showing dilated costal margin and constricted discal cell (black).

Key to genera of Xenomyzini

1. Third antennal segment with distinct apical style, fig. 12. Venation as in fig. 23: anal cell open, or closed near to margin; fifth posterior cell not making contact with discal cell. Generally tiny, fragile flies, with broad wings 2

   Third antennal segment small, seed-like, with a very long, fine arista, often with a white tip (fig. 13). Venation as in fig. 24: anal cell closed and stalked; fifth posterior cell making contact with discal cell. Generally small to medium-sized flies, with narrower wings 7

2. Mesonotum with a very exaggerated hump (fig. 12). Third antennal segment awl-shaped, with long, two-segmented style. Female ovipositor with spines *Oxynoton* Janssens, 1951

   Mesonotum in side view symmetrically rounded. Third antennal segment and style shorter 3

3. Antennae exceptionally long, styliform, and hairy; combined length of micro-segments of style longer than that of third segment. Wings and abdomen unusually broad . . . . . *Margaritola* Hull, 1962

   Antennae not of this length 4

4. Second segment of style pointed, without obvious hairs *Holcocephala* Jaennicke, 1867

   Second segment of style with obvious hairs and sometimes blunt-tipped . . 5

5. Second segment of antennal style with long hairs. Abdomen elongate-cylindrical, with discal bristles . . . . . *Oligopogon* Loew, 1847

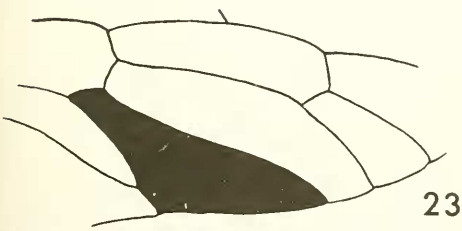
   Second segment of antennal style with short hairs. Abdomen at most twice as long as thorax, without discal bristles 6

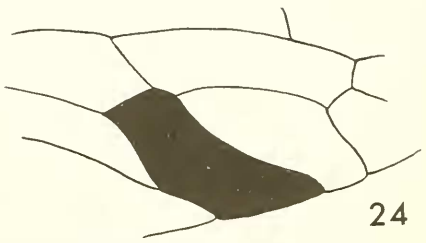
6. Both segments of style hairy, and second segment with a strong spine *Rhipidocephala* Hermann in Engel, 1925

   First segment of style bare; second without a strong spine *Paroxynoton* Janssens, 1953

7. Second abdominal segment abnormally narrow and elongate, twice as long as broad; abdomen petiolate, like a wasp . . . . . *Icaromima* Enderlein, 1914

   Second abdominal segment not long and narrow; abdomen not so markedly petiolate [Curran, 1934] . . . . . *Xenomyza* Wiedemann, 1817
   (*Damalis* auct. nec. Fabricius, 1805, including *Lasiodamalis* Hermann, 1926)





Figs. 23, 24: Detail of wing-venation in *Holcocephala* (23) and *Xenomyza* (24), showing different shape of fifth posterior cell (in black).

Key to genera of Stichopogonini

1. Pulvilli absent 2

   Pulvilli present, even if reduced 3

2. First tarsal segment hardly longer than second [EFFLATOUN, 1937]
Rhadinus Loew, 1856

First tarsal segment as long as next three segments together
Sporadothrix Hermann, 1908

3. Eyes separated at vertex by only about twice width of ocellar tubercle. Pulvilli reduced to narrow vestiges . . . . . *Psilinus* Wulp, 1899

Eyes separated at vertex by a great saddle-shaped space 4—5 times as wide as ocellar tubercle. Pulvilli normal 4

4. A pair of well-developed bristles standing between the ocelli. Fourth posterior cell of the wing with a long stalk at its base. Usually small, or even tiny flies [BEZZI, 1910; EFFLATOUN, 1937] . . . . . *Stichopogon* Loew, 1847

Ocellar bristles weak or absent. Fourth posterior cell with a short basal stalk, or none. Larger flies, about 11 mm long, and robustly built [BEZZI, 1910]
Clinopogon Bezzi, 1910

Key to genera of Leptogasterini

1. Occiput with well-developed bristles 2

Occiput with short hairs only, no bristles 4

2. Mostly large, or very large, brightly coloured flies. Anal cell of wing closed and stalked 3

Moderately small species, sombrely coloured. Anal cell of wing open
Leptogaster Meigen, 1803

3. Prosternum broadly linked with propleuron. Discal cell ending abruptly, fork of M_1/M_2 situated well back towards small crossvein
Ammophilomima Enderlein, 1914

Prosternum only partly linked with propleuron. Discal cell ending acutely, fork of M_1/M_2 near its tip . . . . . *Lagynogaster* Hermann, 1917

4. Prothorax with a bifid process, which arises between the two processes of the mesonotum . . . . . *Euscelidia* Westwood, 1849

Prothorax without such a process 5

5. Hind femora and tibiae strongly swollen, with thick, erect hairs
Lasiocnemus Loew, 1851

Hind femora and tibiae not strongly swollen, but distinctly elongate. Hind tibiae and tarsi with conspicuous plumes . . . . . *Dolichoscius* Janssens, 1952

Key to genera of Atomosiini

1. Frons more or less widened towards vertex, broader above ocelli than below. Small seta of third antennal segment almost apical, or absent 2

Frons narrowed towards vertex. Small seta of third antennal segment dorsal 3

2. First antennal segment twice as long as second. Scutellum entirely without punctate markings. Genitalia directed posteriorly, free *Goneccalypsis* Hermann, 1912

First antennal segment, at most, as long as second, sometimes shorter. Scutellum punctate. Genitalia ventrally placed; male genitalia clubbed, directed forwards. Ovipositor concealed by lateral valves, exceptionally spiny
Loewinella Hermann, 1912

3. Third antennal segment long, spindle-shaped . . . *Atomosia* Macquart, 1838

Third antennal segment sharply pointed . . . . . *Atractia* Macquart, 1838

Key to genera of Laphriini

1. Proboscis flattened into a blade like a paper-knife, with its edges dorsal and ventral 2

   Proboscis triangular in cross-section, with a flat surface ventrally. Sometimes curved upwards into a sickle-shape 4

2. Face gently swollen up to base of antennal tubercle. Large, hairy, bee-like flies *Dassylina* Bromley, 1935

   Face abruptly swollen into a knob which occupies only lower half 3

3. Antennae conspicuously elongate. Abdomen constricted at $^2/_3$ segments, giving a wasp-like appearance. Margin of scutellum with very short hairs, or none at all *Storthyngomerus* Hermann, 1919

   Antennae not conspicuously elongate; third segment often rather plump. Abdomen seldom constricted, and then it is at $^1/_2$ segments. Margin of scutellum usually with long hairs or fine bristles [Bromley, 1935] . . . . *Laphria* Meigen, 1803

4. Costa of wing not thickened as far as tip of vein R_5, and entire hind margin membranous. First posterior cell closed and stalked 5

   Costa of wing thickened at least as far as vein M_4, or beyond 9

5. Claws blunt at tip. Vein M_2 of wing nearly always cut short before reaching wing-margin. Palpi with only one segment. Lower margin of occiput produced into a rim *Ctenota* Loew, 1873

   Claws pointed at tip. Vein M_2 of wing reaching, margin, or almost so. Palpi with two segments. Lower margin of occiput not produced 6

6. Hind femora very strongly swollen. Third antennal segment hairy above *Laxenecera* Macquart, 1831

   Hind femora not strongly swollen. Third antennal segment bare above . . . 7

7. Scutellum with long, strong marginal bristles. Face smoothly rounded, with a moustache of strong bristles extending up to antennae. Third antennal segment clavate, with two-segmented style *Nusa* Walker, 1851 (*Dasythrix* Loew, 1851)

   Scutellum without marginal bristles 8

8. Abdomen with a clump of strong bristles on first segment only. Moustache consisting of a row of strong bristles along mouthmargin and a mass of soft, silky hairs above these [Engel, 1924] . . *Perasis* Hermann, 1905 (*Saucropogon* Hull, 1962)

   Abdomen with strong lateral bristles on several other segments beyond the first. Moustache consisting of hairs and bristles not so clearly separated *Glyphotriclis* Hermann, 1920 (those without pulvilli a distinct genus?)

9. Pulvilli absent: claws long and slender. Vein M_3 parallel to outer end of discal cell, and often in line with it (fig. 6) . . . . . *Anypodetus* Hermann, 1907

   Pulvilli present 10

10. Costa extends round hind margin of wing at most as far as vein Cu + 1A; axillary cell has no vein along its outer margin (fig. 5) 11

    Costa extends round axillary cell 16

11. First posterior cell of wing open on margin. Palpi thicker at tip than at base 12

    First posterior cell of wing closed on or before wing-margin 13

12. Hind femora slender [Efflatoun, 1937] . . . . . *Laphystia* Loew, 1847

    Hind femora distinctly swollen . . . . . *Gerrolasius* Hermann, 1920

13. Hind femora conspicuously swollen 14

    Hind femora not conspicuously swollen 15

14. Hind femora with strong, spine-bearing tubercles ventrally. Face not swollen [Oldroyd, 1940] . . . . . *Hoplistomerus* Macquart, 1838
Hind femora swollen, and with bristles present, but not arising from clearly defined tubercles. Face distinctly swollen . . . . *Trichardis* Hermann, 1906

15. Palpi large and inflated, ovoid . . new genus Oldroyd & van Bruggen, 1963
Palpi pointed at tip . . . . . some *Laphystia* Loew, 1847

16. Lower occiput with a backwardly-projecting flange. Palpi with only a single segment (Ctenotini of Hull, 1962) 17
Lower occiput rounded, sometimes slightly bulbous, but never with a flange. Palpi with two segments 14

17. Claws notably blunt at tip 18
Claws pointed. Abdomen club-shaped, becoming broader posteriorly. Legs elongate, especially hind pair . . . . . *Lamyra* Loew, 1851

18. Vein M_2 cut short before it reaches wing-margin. Ground colour of body mostly obscured by scaly hairs. Third antennal segment short, club-shaped, little longer than first two segments together . . . . . *Ctenota* Loew, 1873
Vein M_2 complete. Ground colour of body clearly visible through sparse hair. Third antennal segment elongate, 3—4 times as long as first two segments together *Paractenota* Engel, 1925; *Stiphrolamyra* Engel, 1926

19. Veins closing discal cell parallel to, or even in line with, vein M_3, which closes fourth posterior cell (fig. 6) . . . . . *Orthogonis* Hermann, 1914
These veins not parallel: vein M_3 distinctly curved 20

20. Plump, hairy flies, mimicking carpenter-bees *(Xylocopa)*. Palpi flattened, blade-like. Legs short, densely fringed with long hairs, mostly black *Hyperechia* Schiner, 1866 (here also comes *Systropalpus* Hull, 1962)
Elongate, bare or only moderately hairy flies, with long, slender legs. Palpi either cylindrical or flattened 21

21. Face with prominent knob 22
Face without prominent knob 23

22. Proboscis curved upwards at tip, like a scimitar [Engel, 1932; Bromley, 1930] *Proagonistes* Loew, 1858
Proboscis straight . . . . . *Andrenosoma* Rondani, 1856

23. Metanotal callosities hairy or bristly . . . . . *Katharma* Oldroyd, 1959
Metanotal callosities bare 24

24. Third antennal segment hairy dorsally as well as ventrally. Hind femora swollen, hind tibiae curved [Curran, 1928] . . . . . *Laxenecera* Macquart, 1838
Third antennal segment without hairs dorsally. Hind femora slender, fairly long, hind tibiae not noticeably curved . . . . . *Smeryngolaphria* Hermann, 1912

Key to genera of Ommatiini

1. Third antennal segment elongate, conical, about twice as long as the plumose arista *Michotamia* Macquart, 1838 (*Allocotosia* Schiner, 1866)
Third antennal segment short, ovoid, less than half as along as the plumose arista 2

2. Large, stout, yellow and black flies from the margins of the Indian Ocean. Scutellum with two marginal bristles. A tuft of stiff hairs between haltere and metanotal callosity . . . . . *Cophinopoda* Hull, 1958
Moderately small, or tiny, slender, blackish species. Scutellum usually bare, or with hairs only. No tuft of stiff hairs between halteres and metanotal callosity 3

3. Abdomen cylindrical [Curran, 1928; Bromley, 1936]
Ommatius Wiedemann, 1821
Abdomen narrowed at base, and slightly clubbed [Curran, 1928; Bromley, 1936]
Emphysomera Schiner, 1866

Key to genera of Asilini

1. Three submarginal cells (figs. 15—17), though in *Apoclea* the recurrent veinlet is not always complete 2
Only two submarginal cells 8
2. First posterior cell closed and stalked, or at least very strongly narrowed on wing-margin. Crossvein separating second and third submarginal cells may be broken, or even absent, and may be different in the two wings of one specimen [Efflatoun, 1934] . . . . . *Apoclea* Macquart, 1838
First posterior cell open, not strongly narrowed towards margin 3
3. Apparent cross-vein formed by base of R_4 comes before tip of discal cell, giving pattern shown in figs. 15, 17 4
Apparent cross-vein formed by base of R_4 comes beyond tip of discal cell, giving pattern shown in fig. 16 [Curran, 1928; Efflatoun, 1934].
Promachus Loew, s. lat. 5
4. Forks of R_{2+3} and R_{4+5} closely approximated, so that R_3 and R_4 are both short, as in fig. 15 [Ricardo, 1922] . . . . . *Alcimus* Loew, 1848
Forks of R_{2+3} and R_{4+5} separated, so that R_3 is much longer than R_4 (fig. 17) [Ricardo, 1921; Blasdale, 1957] . . . . . *Philodicus* Loew, 1848
5. Apex of antennal arista dilated . . . . subgenus *Philomachus* Karsch, 1887
Apex of antennal arista pointed 6
6. Ovipositor short: two halves of tenth tergite distally pointed and diverging
subgenus *Enagaedium* Engel, 1929
Ovipositor short or long, but two halves of tenth tergite sub-ovate, not diverging 7
7. Ovipositor composed of last five segments, and markedly elongate
subgenus *Trypanoides* Becker, 1925
Ovipositor composed of last three segments, and only moderately long
subgenus *Promachus* Loew, 1848, s. str.
8. Metanotal callosities, beneath and lateral to scutellum bare 9
Metanotal callosities hairy 17
9. Face swollen, either a general swelling of the whole face, or a distinct hump. Ovipositor of female elongate, sword-like (fig. 19) 10
Face plane. Ovipositor not sword-like, except in *Synolcus* 12
10. Scutellum with 4—6 marginal bristles. Face with a distinct hump. Occipital bristles proclinate. Wings often dilated in male (not in subgenus *Neodasophrys* Ricardo, 1920) [Engel, 1927] . . . . . *Dasophrys* Loew, 1858
Scutellum with only 2—4 marginal bristles. Face with smooth, gentle swelling 11
11. Occipital bristles proclinate. Wings of male dilated
Hobbyus Bromley, 1952 (*Merogymnus* Hobby, 1933, nec. Ogilby, 1908)
Occipital bristles short, and not proclinate. Wings of male not dilated
Dysclytus Loew, 1858
12. Fourth posterior cell (M_3) bulging forward into discal cell, which is thereby constricted. Ovipositor long, sword-like. Scutellum with two (rarely four) marginal bristles and with short, scattered hairs on disc [Ricardo, 1922; Engel, 1927]
Synolcus Loew, 1858

Fourth posterior cell normal, discal cell not markedly constricted. Scutellum with numerous marginal bristles and with long hairs on disc. Ovipositor short [Ricardo, 1920; as *Dysmachus*] *Neolophonotus* sensu lat. 13

13. Abdomen with discal bristles at least dorsally. Ovipositor ending in a pair of short points (fig. 20) 14

Abdomen without discal bristles. Ovipositor short, laterally compressed, with blunt upturned lobes (fig. 21) 16

14. Discal bristles of abdomen on tergites only [Engel, 1927] *Lophybus* Engel, 1925

Discal bristles of abdomen on sternites as well as tergites 15

15. First posterior cell closed . . . . . *Megadrillus* Bigot, 1857

First posterior cell open [Engel, 1927; Curran, 1934; Efflatoun, 1934] *Lophopeltis* Engel, 1925

(*Antilophonotus* Lindner, 1955, is known only from one male, which I have not seen)

16. Scutellum with long hairs only. Wings of male dilated on costal margin [Engel, 1927] . . . . . *Hippomachus* Engel, 1927

(*Trichonotus* Loew, 1858, nec Schneider, 1801)

Scutellum always with a double row of long, curved, marginal bristles. Wings of male not dilated [Engel, 1927] . . . . *Neolophonotus* Engel, 1925, s. str.

17. No bristles laterally on abdominal segments. Middle of face shining black *Rhadiurgus* Loew, 1849

Abdominal segments with bristles laterally 18

18. One or more pregenital segments are bare and shining, and in female apparently form part of ovipositor 19

Pregenital segments at least partly covered with tomentum, not appearing to form part of ovipositor 20

19. Basitarsus of fore-legs markedly short and stout. Occipital bristles straight *Astochia* Becker, 1913

Basitarsus of fore-legs normal. Occipital bristles proclinate *Neoitamus* Osten-Sacken, 1878

(*Itamus* Loew, 1849, nec Schmidt-Goebel, 1846)

20. Dorsocentrals scarcely extending forward beyond transverse suture, and ceasing abruptly 21

Dorsocentrals continued forwards of transverse suture with little diminution, but sometimes more hairlike anteriorly 22

21. Upper forceps of male bifid, often elaborately developed. Ovipositor short and down-turned [Engel, 1927] . . . . . *Heligmoneura* Bigot, 1858

Upper forceps of male not bifid, though sometimes with a short dorsal appendage. Ovipositor generally longer than the two preceding segments [Engel, 1927; Efflatoun, 1934] . . . . . *Neomochtherus* Osten-Sacken, 1878

(*Mochtherus* Loew, 1849, nec Schmidt-Goebel, 1846)

22. Third antennal segment slender, awl-shaped. Body thickly covered with long, weak hairs . . . . . *Erax* Scopoli, 1763 (*Protophanes* Loew, 1860)

Third antennal segment elongate oval 23

23. Facial knob very weakly developed; upper end of moustache further from antennae than length of first antennal segment [Efflatoun, 1934] *Cerdistus* Loew, 1849

Facial knob strongly developed; upper end of moustache not further from antennae than length of first antennal segment 24

24. Cerci of ovipositor inset into ninth tergite. Dorso-centrals and acrostichals developed into a thoracic mane . . . . . *Dysmachus* Loew, 1860
Cerci of ovipositor free. No conspicuous development of a thoracic mane 25
25. Eighth sternite of male produced ventrally [Efflatoun, 1934] *Machimus* Loew, 1849
Eighth sternite not produced *Tolmerus* Loew, 1849 + *Dinozabrus* Hull, 1962

A Bibliography of African Asilidae

Bezzi, M.: Ditteri eritrei raccolti dal Dott. Andreini e dal Prof. Tellini. — Bol. Soc. ent. Ital. 37, S. 267—294; 40, S. 8. Firenze 1906—1908.

— Revisio systematica generis dipterorum *Stichopogon*. — Ann. Mus. nat. Hung. VIII, S. 129—139. Budapest 1910.

Bigot, J. M. F.: Voyage de M. Ch. Alluaud dans le territoire d'Assinie. Diptères. — Ann. Soc. ent. France 1891, S. 365—386. Paris 1891.

Blasdale, P.: The Asilidae (Diptera) of the genus *Philodicus* Loew in the Ethiopian Region. — Trans. R. ent. Soc. Lond. 109, S. 135—148. London 1957.

Bromley, S. W.: The genus *Microstylum* in Madagascar (Diptera: Asilidae). — Trans. Amer. ent. Soc. 53, S. 201—207. Philadelphia 1927.

— New robber flies from Madagascar (Diptera: Asilidae). — Bull. Brooklyn ent. Soc. 25, S. 283 bis 290. Lancaster Pa. 1930.

— A review of the genus *Proagonistes* Loew (Diptera, family Asilidae) with descriptions of eight new species. — Ann. Mag. nat. Hist (10) 6, S. 209—224. London 1930.

— New Asilidae from the Belgian Congo (Diptera). — Rev. Zool. Bot. afr. 26, S. 404—415. Bruxelles 1935.

— A note on the validity of *Proagonistes athletes* Speiser (Diptera, family Asilidae). — Ann. Mag. nat. Hist. (10) 15, S. 398—399. London 1935.

— Studies in South African Asilidae (Diptera). — Ann. Transvaal Mus. 18, S. 125—146. Pretoria 1936.

— Madagascar robber flies, with descriptions of new species (Diptera: Asilidae). — Trans. Amer. ent. Soc. 68, S. 11—21.

— New South African Asilidae (Diptera). — Ann. Durban Mus. (3) 8, S. 109—117. Durban 1947.

— African bee-killing Asilidae. — Trans. Rhodes. sci. Assoc. 42, S. 63—68. Bulawayo 1949.

— Notes on South African Asilidae (Dipt.). — Durban Mus. Novitates 4, S. 19—21. Durban 1952.

Clements, A. N.: The use of the prosternum in classifying Asilidae. — Proc. R. Ent. Soc. Lond. B. 20, S. 10—14. London 1951.

Curran, C. H.: Undescribed Asilidae from the Belgian Congo. — Amer. Mus. Novitates 272, 18 S. New York 1927.

— Diptera of the American Museum Congo Expedition II. — Bull. Amer. Mus. Nat. Hist. 57, S. 328—338. New York 1928.

— Notes and descriptions of African Diptera. — Amer. Mus. Novitates 710, 16 S. New York 1934.

Efflatoun Bey, H. C.: A monograph of Egyptian Diptera, Parts. IV, V. — Mém. Soc. R. ent. Egypte 4, fasc. 2, 3, 443 S. Cairo 1934, 1937.

Enderlein, G.: Zur Kenntnis der Asiliden-Subfamilien Dasypogoninae und Archilaphriinae. — Wien. ent. Z. 33, S. 151—174. Wien 1914.

Engel, E. O.: Studien über afrikanische Dipteren (Asilidae). — Wiener ent. Z. 41, S. 100—110. Wien 1924.

— Die afrikanische Asilidengattung *Gonioscelis* Schin. (Dipt.). — Mitt. zool. Mus. Berlin 12, S. 161 bis 176. Berlin 1925.

— Egyptian Asilidae collected by H. C. Efflatoun Bey. — Bull. Soc. ent. Egypte 8 (1924), S. 345 bis 355. Cairo 1925.

— In Lindner, E.: Die Fliegen der Paläarktischen Region. — Bd. 4, Heft 24, 491 S. Stuttgart 1925—1930.

— Notes on some Asilinae of the South African Region. — Ann. Transvaal Mus., 12, S. 132—180. Pretoria 1927.

— New or little known Asilidae from South Africa. — Ann. Transvaal Mus. 13, S. 154—171. Pretoria 1929.

— New or little known Asilidae from South Africa II. — Ann. Transvaal Mus. 14, S. 253—283. Pretoria 1932.

ENGEL, E. O., & CUTHBERTSON, A.: Systematic and biological notes on some Asilidae (Diptera) of Southern Rhodesia. — Proc. Rhodes. sci. Assoc. 34, S. 35—47. Bulawayo 1934.

— On the biology of some Rhodesian Diptera, together with descriptions of three species of Asilidae new to science. — Trans. Rhodes. Sci. Ass. 35, S. 1—15. Bulawayo 1937.

— On the immature stages of *Psilocephala africana* Wied. (Therevidae), together with the description of a species of *Microstylum* (Asilidae) new to science. — Trans. Rhodes. sci. Ass. 35, S. 133—135. Salisbury 1938.

— Systematic and biological notes on some brachycerous Diptera of Southern Rhodesia. — J. ent. Soc. S. Afr. II, S. 181—195. Cape Town 1939.

GRÜNBERG, K.: Zur Kenntnis der Asiliden-Gattung *Hyperechia* Schiner. — Deutsche ent. Z. 1907, S. 515—524. Berlin 1907.

HARDY, G. H.: The Asilidae of Australia, Parts 1—4. — Ann. Mag. nat. Hist. (10) 13, S. 498—525; (10) 14, S. 1—35; (10) 16, S. 161—187, 405—426. London 1934, 1935.

— On classifying Asilidae. — Ent. mon. Mag. 84, S. 116—119. London 1948.

HERMANN, F.: Beitrag zur Kenntnis der Asiliden (Dipt.) II: Die um das Genus *Laphystia* sich gruppierenden Asilidenformen. — Berl. ent. Z. 50, S. 29—42. Berlin 1905.

— Beitrag zur Kenntnis der Asiliden II. 3: *Trichardis*, ein neues Asiliden-Genus aus dem Formenkreis von *Laphystia*. 4: Eine neue *Lagodias*-Art. — Z. Syst. Hymen. u. Dipt. VI, S. 136—144. Teschendorf 1906.

— Beitrag zur Kenntnis der Asiliden IV: Nachträge zu meiner Mitteilung über die um das Genus *Laphystia* sich gruppierenden Asilidenformen. — Berl. ent. Z. 53, S. 152—170. Berlin 1908.

— Beiträge zur Kenntnis der südamerikanischen Dipteren-Fauna aus Chile, Peru und Bolivia, ausgeführt von W. SCHNUSE. Fam. Asilidae. — Nova Acta Acad. Kaiserl. Leop.-Carol. Deutsch. Akad. Naturf. 96, S. 1—275. Halle 1912.

— Über die Asilidengattung *Laxenencera* Mcq. (Dipt.). — Deutsch. ent. Z. 1919, S. 337—358. Berlin 1919.

— Beitrag zur allgemeinen Systematik der Asiliden. — Zool. Jahrb. 2, Abt. Syst. 43, S. 170. Jena 1920.

— Die Gattungen der Leptogasterinen (Dipt.). — Verh. Zool. Bot. Ges. Wien 74/75 (1924/25), S. 140—152. Wien 1926.

HOBBY, B. M.: Descriptions of new Rhodesian Asilidae (Dipt.). — Ent. mon. Mag. 69, S. 108—112. Oxford 1933.

— Two new species of *Promachus* (Dipt.) from the Transvaal. — Ent. mon. Mag. 69, S. 193—195. Oxford 1933.

— Descriptions of two new Asilidae (Dipt.) from the Transvaal. — Ent. mon. Mag. 69, S. 226 to 229. Oxford 1933.

— Description of a new Asilid (Diptera) from Madagascar. — Ent. mon. Mag. 70, S. 15—17. Oxford 1934.

— New African Asilidae (Dipt.). — Ent. mon. Mag. 70, S. 234—239. Oxford 1934.

— Rhodesian Asilidae (Dipt.) and their prey, collected by Mr. C. F. M. SWYNNERTON. — J. anim. Ecol. 4, S. 90—102. Cambridge 1935.

— The Ethiopian species of the *fasciata*-group of the genus *Bactria* (= *Promachus*) (Diptera, Asilidae). — Ent. mon. Mag. 72, S. 182—199, 231—249, 274—278. Oxford 1936.

— *Stiphrolamyra comans* sp. n., a new African asilid. — Ent. mon. Mag. 75, S. 254. Oxford 1939.

— Notes on the Ethiopian Asilidae (Dipt.) *Bactria (Promachus) negligens* Adams and *B. (P.) guineensis* Wied. and on a new species. — Ent. mon. Mag. 76, S. 137—140. Oxford 1940.

— Some African species of *Laphria* (Diptera, Asilidae). — Ent. mon. Mag. 84, S. 139—140. Oxford 1948.

HULL, F. M.: Robber flies of the world: the genera of the family Asilidae. — U. S. Nat. Mus. Bull. 224, parts 1, 2, 907 S. Washington 1962.

JANNSENS, E.: Contribution à l'étude des diptères de l'Urundi. I Un nouveau genre de diptère Asilidae: *Oxynoton* n. g. — Bull. Inst. Sci. nat. Belg. 27, no. 54, 4 S. Bruxelles 1951.

— Révision du genre *Lasiocnemus* Loew (Diptera Asilidae). — Bull. Inst. Sci. nat. Belg. 28, no. 24, 10 S. Bruxelles 1952.

— Une nouvelle espèce de diptère asilide d'Afrique centrale: *Laphria maynéi* n. sp. — Bull. Ann. Soc. ent. Belg. 89, S. 207—209. Bruxelles 1953.

— Contribution à l'étude des diptères de l'Urundi. IV. Asilidae. — Bull. Inst. Sci. nat. Belg. 29, no. 42, 15 S. Bruxelles 1953.

— Révision des espèces africaines du genre *Ammophilomima* Enderlein (Diptera Asilidae). — Bull. Inst. Sci. nat. Belg. 29, no. 44, 12 S. Bruxelles 1953.

— Contribution à la faune dipterologique de Madagascar. — Bull. Inst. Sci. nat. Belg. 30, no. 35, 11 S. Bruxelles 1954.

Jannsens, E.: Exploration du Parc. Nat. Upemba, Mission de Witte: Leptogasterinae (Diptera Asilidae). — Fasc. 25, S. 113—134. Bruxelles 1954.

— Leptogasterinae du Congo Belge. — Ann. Mus. Congo. Belge, Sci. Zool. 1, S. 400—401. Bruxelles 1954.

— Contribution à l'étude des diptères du Congo Belge: Leptogasterinae (Asilidae). — Rev. Zool. Bot. afr. 50, S. 302—304.

— Contributions à l'étude de la faune entomologique du Ruanda-Urundi, Mission P. Basilewsky 1953: Leptogasterinae Ann. Mus. Congo Belge, Sci. Zool. 36, S. 303—305.

Karl, E.: Vergleichend-morphologische Untersuchungen der männlichen Kopulationsorgane bei Asiliden (Diptera). — Beitr. Ent. 9, S. 619—680. Berlin 1959.

Karsch, F. A.: Westafrikanische Dipteren, gesammelt von Herrn Stabsarzt Dr. Falkenstein. — Z. Ges. Naturwiss. (3) 4, S. 378—380. Berlin 1879.

— Bericht über die durch Herrn Lieutenant Dr. Carl Wilhelm Schmidt in Ostafrika gesammelten ... Dipteren. — Berl. ent. Z. 31, S. 373—376. Berlin 1887.

Lindner, E.: Ostafrikanische Asiliden (Dipt.). (Ergebnisse der Deutschen Zoologischen Ostafrika-Expedition 1951/52, Gruppe Lindner – Stuttgart, Nr. 16.) — Jh. Ver. vaterl. Naturk. Württemberg 110, S. 24—46. Stuttgart 1955.

— Afrikanische Asilidae (Dipt.). (Ergebnisse der Forschungsreise Lindner 1958/59, Nr. 8.) — Stuttgarter Beitr. Naturk. Nr. 61, 13 S. Stuttgart 1961.

Loew, H.: Über die europäischen Raubfliegen (Diptera asilica). — Linnaea Entomologica 2, S. 384 bis 394, 535—538; 3, S. 386—404. Stettin 1847–1849.

— Diagnosen der Dipt. von Peters Reise in Mossambique. — Ber. K. preuß. Akad. 1852, S. 658 bis 659. Berlin 1852.

— Neue Beiträge zur Kenntnis der Dipteren. — Progr. Realschule Meseritz 2, S. 4–15; 4, S. 37 bis 43. Meseritz 1854, 1856.

— Bidrag till kånnedomen om Afrikas Dipteren. — Ofv. Kongl. Vet-Akad. Forhl. 14 (1857), S. 337—383. Stockholm 1858.

— Die Dipteren-Fauna Südafrikas, S. 56—171. Berlin 1860.

— In Peters, W.: Naturw. Reise nach Mossambique (Zool.) 5: Dipt., S. 5. Berlin 1862.

— Enumeratio dipteroroum quae C. Tollin ex Africa meridionali misit. — Wiener ent. Monatsschr. 7, S. 10—12. Wien 1863.

Malloch, J. R.: Dipt. Patagonia & S. Chile. VI (4), S. 324. London 1933.

Oldroyd, H.: Ruwenzori-Expedition 1934—1935: Asilidae. 2, S. 25—46. London 1939.

— Entomological expedition to Abyssinia, 1926—1927. Asilidae. — Ann. Mag. nat. Hist. (11) 5, S. 195—201. London 1940.

— The genus *Hoplistomerus* Macquart (Diptera: Asilidae). — Trans. R. ent. Soc. Lond. 90, S. 307—318. London 1940.

— Results of the Armstrong College expedition to Siwa Oasis (Libyan Desert), 1935. — Bull. Soc. Fouad Ier, Ent. 31, S. 113—120. Cairo 1947.

— The genus *Sisyrnodytes* Loew (Diptera: Asilidae). — Proc. R. ent. Soc. Lond. (B) 26, S. 79—88. London 1958.

— Synopsis des Asilidae (Diptera) de Madagascar. — Mém. Inst. sci. Madagascar Série E XI, S. 247—319. Tananarive 1959.

— Mission zoologique de l'I. R. S. A. C. en Afrique orientale (P. Basilewsky et N. Leleup, 1957). Diptera Asilidae. — Ann. Mus. Congo Belge (Sér. 8°) Sci. zool. 81, S. 407—411. Tervuren 1960.

Oldroyd, H., & van Bruggen, A. C., 1963: A new South African bee mimic (Diptera: Asilidae). — J. ent. Soc. S. Afr. (in press).

Osten-Sacken, C. R.: On Professor Brauer's paper: Versuch einer Charakteristik der Gattungen der Notacanthen, 1882. — Berl. ent. Z. 26, S. 364. Berlin 1882.

Ricardo, G.: Notes on Diptera from South Africa (Tabanidae and Asilidae). — Ann. Mag. nat. Hist. (7) 6, S. 166—178. London 1900.

— In Forbes, Natural History of Socotra and Abd-el-kuri. S. 362—375. Liverpool 1903.

— Notes on the Asilidae: Sub-division Asilinae. — Ann. Mag. nat. Hist. (9) 3, S. 44—79; (9) 5, S. 169—185, 209—241. London 1919, 1920.

— Notes on the Asilinae of the South African and Oriental Regions. — Ann. Mag. nat. Hist. (9) 8, S. 175—192; (9) 10, S. 36—73. London 1921, 1922.

— New species of Asilidae from South Africa. — Ann. Mag. nat. Hist. (9) 15, S. 234—282. London 1925.

— Notes on the two genera *Nusa* and *Pogonosoma* (Laphrinae). — Ann. Mag. nat. Hist. (9), S. 205—212. London 1927.

Speiser, P., in Sjostedt, Y.: Wissenschaftliche Ergebnisse der Schwedischen zoologischen Expedition nach dem Kilimandjaro, dem Meru und den umgebenden Masaisteppen Deutsch-Ostafrikas, 1905—1906. 10. Diptera. 4. Orthorhapha, S. 82—107. Stockholm 1910.

Timon-David, J.: Contribution à l'étude des Asilidae de Madagascar. I. Une nouvelle espèce de *Proagonistes* Loew (Diptères). — Nat. malgache 3, S. 159—166. Tananarive 1951.

— Contribution à l'étude des Asilidae de Madagascar. II. Revision du genre *Microstylum* et description d'espèces nouvelles. — Mém. Inst. sci. Madagascar. Série E. 1, S. 180—215. Tananarive 1952.

— Contribution à l'étude des Asilidae de Madagascar. III. Le Genre *Hyperechia* Schiner (Dipt.). — Nat. malgache 5, S. 211—216. Tananarive 1953.

Wulp, F. M. van der: Asilidae from Aden and its neighbourhood. — Trans. ent. Soc. Lond. 1899, S. 81—98. London 1899.

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